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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
RICHARD CRUMBACH, ET AL. : EXAMINER: ABOAGYE, M.  
SERIAL NO: 10/526,931 :  
FILED: MARCH 8, 2005 : GROUP ART UNIT: 1793  
FOR: TRANSPARENT PANE WITH A :  
NONTRANSPARENT CONTACT  
SURFACE FOR A CONNECTION BY  
SOLDERING

APPEAL BRIEF

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

This is an appeal from the rejection of the claims contained in the Office Action mailed on June 25, 2007. A Notice of Appeal was timely filed on October 22, 2007.

I. REAL PARTY IN INTEREST

The real party in interest for this appeal in the present application is Saint-Gobain Glass, France, by way of assignment recorded in the U.S. Patent & Trademark Office at Reel 019777, Frame 0394.

II. RELATED APPEALS AND INTERFERENCES

To the best of Appellants' knowledge, there are no other appeals or interferences which will directly effect or be directly effected by, or have a bearing on, the Board's decision in this appeal.

### III. STATUS OF CLAIMS

Claims 11-20 are pending in this application. Claims 1-10 have been canceled without prejudice or disclaimer. Claims 11-20 were rejected in the June 25, 2007 Office Action, which rejection forms the basis of this appeal.

### IV. STATUS OF AMENDMENTS

The amendment filed September 24, 2007 was indicated as considered by the Advisory Action mailed October 12, 2007. No amendments have been file subsequent to the mailing of the October 12, 2007 Advisory Action.

### V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention relates to a transparent pane. In accordance with one of the features of the invention, Appellants have recognized an advantageous arrangement wherein in a region of the soldering location, the contact surface has at least one cutout via which the soldering filler metal is visible through the pane after the connection piece has been soldered to the contact surface. This arrangement is included in independent Claim 11.

By way of example, Figure 1 shows an exploded representation of the border region of a composite glazing panel 1. The panel 1 is formed from a first rigid pane 1.1, a second rigid pane 1.2 and a thermoplastic and adhesive interlayer 1.3. A thin film 2, highly transparent for visible light, is applied to the plane surface of the rigid pane 1.1. Near the edge of the first rigid pane 1.1, a contact surface 3 is formed. A cutout 3A forms an observation window in the middle of the contact surface 3.

Above the cutout 3A is the end of a connection piece 4 to be soldered. The connection piece 4 is generally configured as a flat conductor with a support sheet 4.1 and a

metal foil conductor 4.2. A thin layer 5 of soft solder filler metal is applied locally to the latter, within the limits of the actual soldering region. The thin layer 5 forms the deposit of soldering filler metal for soldering the connection piece 4 to be soldered to the contact surface 3.

#### VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The rejection to be reviewed on appeal is of Claims 11-20 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,299,726 to Sauer in view of U.S. Patent No. 6,461,188 to Reul. Claims 12-20 depend from independent Claim 11.

#### VII. ARGUMENT

In the rejection to be reviewed on appeal, Claims 11-20 were rejected under 35 U.S.C. § 103(a) over Sauer in view of Reul.

Independent Claim 11 includes the features of at least one electroconducting, non-transparent contact surface placed on a surface of the pane, to connect it by soldering to a connection piece, wherein, in a region of the soldering location, the contact surface has at least one cutout via which a soldering filler metal is visible through the pane after the connection piece has been soldered to the contact surface.

Sauer discusses a glass sheet 1 having a thin transparent layer 2 provided thereon. Along or adjacent to edge 3 of glazing 1, a thin oxide layer 2 is covered with a coating 4 of tin brazing. The brazing coating 4 is deposited with an ultrasonic soldering machine so that the liquid brazing spreads out over and in the core of thin layer 2 by the heated bit with the ultrasonic vibration applied thereto. A copper strip 5 is applied to the tin coating with the strip 5 spot soldered or brazed to contact points 6 at a spacing A. The strip 5 which can consist of a foil or a braid, is connected directly to the connector wire.

The outstanding Office Action acknowledges that Sauer does not disclose a cut out made in the soldering region. However, the Office Action asserts that Reul makes up for this deficiency. Applicants respectfully disagree. Reul merely discusses a related art document that includes a prefabricated laminated component consisting of a thin metal strip and an insulating sheath composed of thin layers of plastic sheets that surround the strip. The Office Action cites Reul for the description of a cutout, in column 2, lines 8-12. This paragraph of Reul is related to the document DE-C2-4304788, which is equivalent to EP 0 612 119. However, DE-C2-4304788 merely describes a connection element 6 connected to an electrical conductive surface 15 disposed on the glass surface 1. The connection element 6 includes at one of its ends, a welding eyelet 11 that includes a hollow 12 for the introduction of welding 16 inside so as to weld the welding 16 to the conductive surface 15. As such, DE-C2-4304788 describes a cutout or window disposed in the connector 6 for the introducing of the welding, but not a cutout disposed in the conductive surface 15. After welding of the connection element 6, it is not possible to see through the glass surface 1 the welding on the conductive surface 15. In contrast, in one or more embodiments of the invention, the connection element 4 has no cutout. The cutout is made in the electroconducting surface 3 to see the soldering through the pane.

Moreover, it is respectfully submitted that there is no basis in the teachings of either Sauer or Reul to support their applied combination. Certainly, the outstanding Office Action fails to cite to any specific teachings within either reference to support the applied combination. Accordingly, it is respectfully submitted that the combination of Sauer and Reul is the result of hindsight reconstruction in view of the teachings of the present specification, and is improper. Again, the claimed invention recites that the contact surface has at least one cutout through which a soldering filler metal is visible after the connection piece has been soldered to the contact surface. Applicants respectfully submit that the

discussion in Reul in column 2, lines 8-12 describing the document DE 4 304 788 does not suggest or render obvious the features of the claimed invention.

In accordance with features of the invention, once the soft solder filler metal of the thin layer 5 has melted, due to the pressure that acts on the composite glazing, the filler 5 flows right into the cutout 3A. The amount of the soldering metal filler is determined in such a way so that the desired soldering area is obtained in a precise and reliable manner. The result of the soldering can be detected without any problem with the naked eye through the pane 1.1 because the rigid pane 1.1 and the multilayer system 2 are transparent. Accordingly, contact between the soldering filler metal and the side walls of the cutout result at the same time and result in strong adhesion of the soldering filler metal to the material of the contact surface.

Further, owing to the fact that at least one observation window is formed in the actual contact surface, which window remains visible through the transparent pane provided with the contact surface after the locations of the connection pieces have been soldered, it is possible to see, by simple visual verification, whether the soldering filler metal has melted and to what extent. Having the cutout formed in the soldering region of the contact surface has been found to provide a higher mechanical strength at the location of the actual soldering. As such, the connection piece can withstand higher tensile forces. This is an advantage when continuing to handle such a pane, while it is being transported and fitted, because it is rare for connection pieces to be soldered, and when they have been inadvertently broken, to be able to be repaired or extracted from the series.

IX. CONCLUSION

In view of the above remarks, Appellants respectfully request THAT the rejections of the Office Action dated June 25, 2007 be REVERSED.

Respectfully submitted,

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CLAIMS APPENDIX

Claim 11: A transparent pane comprising:

at least one electroconducting, non-transparent contact surface placed on a surface of the pane, to connect it by soldering to a connection piece,

wherein, in a region of the soldering location, the contact surface has at least one cutout via which a soldering filler metal is visible through the pane after the connection piece has been soldered to the contact surface.

Claim 12: The pane as claimed in claim 11, wherein, on the surface of the pane, plural contact surfaces and/or plural cutouts are provided in each contact surface.

Claim 13: The pane as claimed in claim 11, wherein the soldering filler metal, after soldering, is spread over the contact surface, and in the at least one cutout.

Claim 14: The pane as claimed in claim 11, wherein the connection piece is provided, before soldering, with deposits of soldering filler metal that are present in a form of droplets or of a thin layer.

Claim 15: The pane as claimed in claim 11, wherein the contact surface is provided, before soldering, around the at least one cutout, with deposits of soldering filler metal that are present in a form of droplets or of a thin layer.

Claim 16: The pane as claimed in claim 11, wherein a multilayer system transparent to visible light is applied between the surface of the pane and the contact surface or on top of the contact surface provided with the cutout, which multilayer system comprises at least one

electrically conducting layer that is connected in an electrically conducting manner to the contact surface.

Claim 17: The pane as claimed in claim 16, wherein the multilayer system is used as a surface heater and has an electrical contact.

Claim 18: The pane as claimed in claim 16, wherein the multilayer system is used as an antenna and has an electrical contact.

Claim 19: The pane as claimed in claim 11, incorporated as a rigid pane in a composite glazing panel, at least the contact surface and the soldering location both being located on an inside of the composite glazing panel.

Claim 20: A composite glazing panel having a first rigid pane as claimed in claim 11, and at least a second rigid pane, wherein the second rigid pane is provided with an opaque coating that covers the contact surface and optically masks the contact surface.



EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None